

REMARKS

In view of the following reasoning for allowance, the applicants hereby respectfully request further examination and reconsideration of the subject application.

A. Interview Summary

An interview was conducted on 15 May 2007 with Gregory Madden, Ngoc-Yen Vu and Katrina Lyon. After discussions about the cited art, an agreement was made that an RCE would be filed and an amendment would be made to the independent Claims of state that the tilt angle of the camera with respect to the lens is zero in order to capture an in focus uniform resolution image of the whiteboard, so as to overcome the 102(e) rejection in view of Keenan et al, pending any further search necessary by the Examiner.

B. The 35 USC 102(e) Rejection of Claims 1, 3, 5, 6, 11, 15, 19, and 23-25.

Claims 1, 3, 5, 6, 11, 15, 19, and 23-25 were rejected under 35 USC 102(e) as being anticipated by Keenan, U.S. Publication 2004/0201698, herein after referred to as Keenan. It was contended in the above-identified Office Action that Keenan teaches all the elements of the rejected claims. The applicants respectfully disagree with this contention of anticipation.

The applicants' claimed invention provides a single camera for capturing images of a whiteboard wherein a boom is positioned above a whiteboard and the camera is adjusted such that the tilt angle of the lens with respect to the sensor plane of the camera is zero to capture an in focus uniform resolution image of the entire whiteboard.

In contrast, Keenan discloses a computer-based system for capturing images of a target area. At least one digital camera is mounted on a boom assembly at a location spaced from the surface. The at least one camera is oriented so

that the field of view thereof encompasses a target area on the surface. A controller in communication with the at least one digital camera conditions the at least one digital camera to acquire an image of the target area. The image acquired by the at least one digital camera is conveyed to the controller and is processed to form a digital image of the target area. (Abstract)

Keenan, however, does not teach the applicants' claimed capturing of an in focus uniform resolution image of the entire whiteboard. As stated above, Keenan only captures a portion of the whiteboard, a target area, not the whole thing. In fact, to obtain a complete view of the entire whiteboard Keenan employs several cameras (see paragraph 46 of Keenan). Additionally, Keenan does not teach a single view camera adjusted such that the tilt angle of the lens with respect to the sensor plane of the camera is zero so as to capture an in focus, uniform resolution image of the entire whiteboard.

A prima facie case of anticipation is established only when the Examiner shows, *inter alia*, that the cited reference teaches each of the claimed elements of a rejected claim. In this case, the Keenan reference does not teach the advantageous features of the applicants' claimed invention such as being to easily capture a whole whiteboard at a uniform resolution with a single camera. Thus, the rejected claims recite advantageous features that are not taught in the cited art, and as such a prima facie case of anticipation is not established. It is, therefore, respectfully requested that the rejection of Claims 1, 3, 5, 6, 11, 15, 19, and 23-25 be reconsidered based on the exemplary novel claim language:

"A camera system for capturing images of a whiteboard comprising: a boom positioned above a whiteboard; a single view camera mounted to the distal end of said boom and adjusted such that the tilt angle of the lens with respect to the sensor plane of the camera is zero so as to capture an in focus uniform resolution image of said entire whiteboard."

C. The 35 USC 103 Rejection of Claims 12-14.

Claims 12-14 were rejected under 35 USC 103(a) as being unpatentable over Keenan. No other reference was cited. The Examiner contended that though Keenan does not teach that a CPU enhances the whiteboard image by white-balancing the image of the whiteboard to provide an image of the whiteboard with uniform white background color, removing shadows on the whiteboard in the image, and by segmenting non-whiteboard images from the image. However, the Examiner contended that official notice is taken that these features are common and well known in the art. The applicants respectfully disagree with this contention of obviousness.

In order to deem the applicants' claimed invention unpatentable under 35 USC 103, a prima facie showing of obviousness must be made. To make a prima facie showing of obviousness, all of the claimed elements of an applicants' invention must be considered, especially when they are missing from the prior art. If a claimed element is not taught in the prior art and has advantages not appreciated by the prior art, then no prima facie case of obviousness exists. The Federal Circuit court has stated that it was error not to distinguish claims over a combination of prior art references where a material limitation in the claimed system and its purpose was not taught therein (*In Re Fine*, 837 F.2d 107, 5 USPQ2d 1596 (Fed. Cir. 1988)).

The applicants do not believe that improving a whiteboard image by white-balancing the image of the whiteboard to provide an image of the whiteboard with uniform white background color, removing shadows on the whiteboard in the image, and by segmenting non-whiteboard images from the image is well known in the art. The applicants respectfully request that such a reference be cited. While whitebalancing an image may be known, certainly removing shadows on the whiteboard in an image are not well known, nor is segmenting non-whiteboard images from the image.

Furthermore, the applicants' claimed invention provides a camera for capturing images of a whiteboard wherein a boom is positioned above a whiteboard such that the tilt angle of the lens with respect to the sensor plane of the camera is zero to capture an in focus uniform resolution image of the entire whiteboard.

In contrast, Keenan, however, does not teach the applicants' claimed camera adjustment such that the tilt angle of the lens with respect to the sensor plane of the camera is zero thereby capturing of an in focus uniform resolution image of the entire whiteboard. As stated above, Keenan only captures a portion of the whiteboard, a target area, not the whole thing. In fact, to obtain a complete view of the entire whiteboard Keenan employs several cameras (see paragraph 46 of Keenan).

Additionally, the applicants' claimed invention provides a single camera for capturing images of a whiteboard wherein a boom is positioned above a whiteboard such that the tilt angle of the lens with respect to the sensor plane of the camera is zero to capture an in focus uniform resolution image of the entire whiteboard. Keenan employs several cameras, and hence does not teach the applicant's single camera limitation. Nor does Keenan teach a single view camera adjusted such that the tilt angle of the lens with respect to the sensor plane of the camera is zero so as to capture an in focus, uniform resolution image of the entire whiteboard.

Accordingly, the Keenan reference does not teach the advantageous features of the applicants' claimed invention such as being to easily capture a whole whiteboard at a uniform resolution with a single camera. Accordingly, no prima facie case of obviousness has been established in accordance with the holding of *In Re Fine*. This lack of prima facie showing of obviousness means that the rejected claims are patentable under 35 USC 103 over Keenan. As such, it is respectfully requested that Claims 12-14 be allowed based on the following claim language:

"A camera system for capturing images of a whiteboard comprising: a boom positioned above a whiteboard; a single view camera mounted to the distal end of said boom and adjusted such that the tilt angle of the lens with respect to the sensor plane of the camera is zero so as to capture an in focus uniform resolution image of said entire image."

D. The 35 USC 103 Rejection of Claims 2, 4, 7, 16, 17, 20, 21, 26 and 27.

Claims 2, 4, 7, 16, 17, 20, 21, 26 and 27 were rejected under 35 USC 103(a) as being unpatentable over Keenan in view of Rodriguez Jr. (U.S. Patent No. 6,179,426), herein after Rodriguez. The Examiner contended that though Keenan does not teach that the view camera is adjusted on the boom so that the camera's depth of field covers the desired portion(s) of the whiteboard, the tilt angle of the camera's sensing surface is approximately parallel to the plane of the whiteboard, and the distance between the center of projection of the camera and the camera's sensing surface is adjusted to provide optimum focus, Rodriguez teaches these features found in the applicant's dependent claims. The applicants respectfully disagree with this contention of obviousness.

The applicants' claimed invention provides a single camera for capturing images of a whiteboard wherein a boom is positioned above a whiteboard such that the tilt angle of the lens with respect to the sensor plane of the camera is zero to capture an in focus uniform resolution image of the entire whiteboard.

In contrast, Keenan, however, does not teach the applicants' claimed single view camera adjusted such that the tilt angle of the lens with respect to the sensor plane of the camera is zero thereby capturing of an in focus uniform resolution image of the entire whiteboard. As stated above, Keenan only captures a portion of the whiteboard, a target area, not the whole thing. In fact, to obtain a complete view of the entire whiteboard Keenan employs several cameras (see paragraph 46 of Keenan).

Rodriguez teaches a front projection display system that integrates an optical engine, having control and power supply electronics, and a dedicated projection screen to provide a compact video display device. The projection engine is coupled to a high gain projection screen, having an optimized reflection pattern to give optimum optical performance in ambient light and viewing angle sensitive environments. Components of the projection engine are modularly placed in a

retractable arm, pivotally connected to the screen. The arm offers precise registration to the screen apparatus and thus repeatably precisely aligns optically and mechanically to the screen. The projection wall system has an open projection position and a closed storage position. Use of a radically offset projection head having matching keystone correction features allows the arm to protrude above the head of the presenter and offer a sharp and unobtrusive projection zone. (Abstract) Rodriguez, however, does not teach the applicants' claimed **single camera for capturing images** of a whiteboard wherein a boom is positioned above a whiteboard and the camera is adjusted such that the tilt angle of the lens with respect to the sensor plane of the camera is zero to capture an in focus uniform resolution image of the entire whiteboard. Although Rodriguez may teach a camera 756 there is nothing taught in Rodgriguez to indicate that this camera is positioned so as to capture an in focus uniform resolution of the entire image. In fact, by the virtue of it being attached to the arm it would probably not be so positioned because the length of the arm is positioned to align the projector, not the camera. (see Abstract).

Accordingly, Keenan in combination with Rodriguez does not teach the applicants' claimed **single camera for capturing images** of a whiteboard wherein a boom is positioned above a whiteboard such that the tilt angle of the lens with respect to the sensor plane of the camera is zero to capture an in focus uniform resolution image of the entire whiteboard. Nor does Keenan in combination with Rodriguez recognize the advantages of the applicants' claimed invention, such as the audience being able to capture the entire whiteboard with an in focus uniform resolution so that no stitching of images or other manipulations are necessary to produce a readable copy of the whiteboard.

Thus, the applicants have claimed elements not taught in the cited art and which have advantages. Accordingly, no *prima facie* case of obviousness has been established in accordance with the holding of *In Re Fine*. This lack of *prima facie* showing of obviousness means that the rejected claims are patentable under 35 USC 103 over Keenan in view of Rodriguez. As such, it is respectfully requested that Claims

2, 4, 7, 16, 17, 20, 21, 26 and 27 be allowed based on the aforementioned quoted claim language.

E. The 35 USC 103 Rejection of Claims 8, 9 and 10.

Claims 8, 9 and 10 were rejected under 35 USC 103(a) as being unpatentable over Keenan in view of Rodriguez Jr. (U.S. Patent No. 6,179,426), in further view of Addeo et al, U.S. Patent No. 5,335, 011, herein after Addeo. The Examiner contended that though Keenan and Rodriguez teach the limitations of Claim 7, they do not disclose that the microphone device is a microphone array. The Examiner contends that Addeo teaches this limitation, however. The applicants respectfully disagree with this contention of obviousness.

As stated previously, the applicants' claimed invention provides a single camera for capturing images of a whiteboard wherein a boom is positioned above a whiteboard such that the tilt angle of the lens with respect to the sensor plane of the camera is zero to capture an in focus uniform resolution image of the entire whiteboard.

In contrast, Keenan, does not teach the applicants' claimed capturing of an in focus uniform resolution image of the entire whiteboard with a single camera. As stated above, Keenan only captures a portion of the whiteboard, a target area, not the whole thing. In fact, to obtain a complete view of the entire whiteboard Keenan employs several cameras (see paragraph 46 of Keenan). Also, Keenan does not teach a single view camera adjusted such that the tilt angle of the lens with respect to the sensor plane of the camera is zero so as to capture an in focus, uniform resolution image of the entire whiteboard.

Rodriguez teaches a front projection display system that integrates an optical engine, having control and power supply electronics, and a dedicated projection screen to provide a compact video display device. (Abstract) Rodriguez, however, also does not teach the applicants' claimed a camera for capturing images of a

whiteboard wherein a boom is positioned above a whiteboard to capture an in focus uniform resolution image of the entire whiteboard.

Addeo teaches a teleconferencing system that has a video camera for generating a video signal representative of a video image of a first station B. A microphone array is also provided in the first station for receiving a sound from one or more fixed non-overlapping volume zones, into which the first station is divided. (Abstract) Addeo, however, also does not teach the applicants' claimed a single camera for capturing images of a whiteboard wherein a boom is positioned above a whiteboard to capture an in focus uniform resolution image of the entire whiteboard.

Accordingly, Keenan in combination with Rodriguez and Addeo does not teach the applicant's claimed single camera for capturing images of a whiteboard wherein a boom is positioned above a whiteboard such that the tilt angle of the lens with respect to the sensor plane of the camera is zero to capture an in focus uniform resolution image of the entire whiteboard. Nor does Keenan in combination with Rodriguez and Addeo recognize the advantages of the applicants' claimed invention, such as the audience being able to capture the entire whiteboard with an in focus uniform resolution so that no stitching of images or other manipulations are necessary to produce a readable copy of the whiteboard.

Thus, the applicants have claimed elements not taught in the cited art and which have advantages. Accordingly, no prima facie case of obviousness has been established in accordance with the holding of *In Re Fine*. This lack of prima facie showing of obviousness means that the rejected claims are patentable under 35 USC 103 over Keenan in view of Rodriguez and Addeo. As such, it is respectfully requested that Claims 8, 9 and 10 be allowed based on the aforementioned quoted claim language.

F. The 35 USC 103 Rejection of Claim 28.

Claim 28 was rejected under 35 USC 103(a) as being unpatentable over Keenan in view of Rodriguez Jr. (U.S. Patent No. 6,179,426), in further view of Branc et al, U.S. Patent No. 6,122,865, herein after Branc. The Examiner contended that though Keenan and Rodriguez teach the limitations of Claim 27 they do not teach the view camera is mounted on a wall and positioned so as to have a view of the whiteboard. However, Branc discloses this feature. The applicants respectfully disagree with this contention of obviousness.

The applicants' claimed invention provides a single camera for capturing images of a whiteboard wherein a boom is positioned above a whiteboard such that the tilt angle of the lens with respect to the sensor plane of the camera is zero to capture an in focus uniform resolution image of the entire whiteboard.

In contrast, Keenan, however, does not teach the applicants' claimed single view camera adjusted such that the tilt angle of the lens with respect to the sensor plane of the camera is zero so as to capture an in focus, uniform resolution image of the entire whiteboard. As stated above, Keenan only captures a portion of the whiteboard, a target area, not the whole thing. In fact, to obtain a complete view of the entire whiteboard Keenan employs several cameras (see paragraph 46 of Keenan).

Rodriguez teaches a front projection display system that integrates an optical engine, having control and power supply electronics, and a dedicated projection screen to provide a compact video display device. Rodriguez, however, also does not teach the applicants' claimed single camera for capturing images of a whiteboard wherein a boom is positioned above a whiteboard to capture an in focus uniform resolution image of the entire whiteboard.

Branc teaches a workspace display comprises a sidewall partition defining a workspace with a portal opening and a door partition to selectively close the portal. A first display screen is disposed on the interior side of the door partition for individual viewing from inside the workspace. A second display screen is disposed exterior of the sidewall partition and positioned a spaced apart distance in general alignment

therewith, without substantial interference with user ingress and egress through the portal opening. A video device is positioned overhead in optical communication with the first display screen when the door partition is in its fully closed position to support individual activities. The video device is in optical communication through the portal opening with the second display screen when the door partition is in its fully open position to support group activities. An image on the second display screen can be viewed on either the interior or exterior screen surfaces. The first display screen and the interior and exterior screen surfaces of the second display screen form dry erasable markerboards. Branc, however, also does not teach the applicants' claimed single camera for capturing images of a whiteboard wherein a boom is positioned above a whiteboard to capture an in focus uniform resolution image of the entire whiteboard.

Accordingly, Keenan in combination with Rodriguez and Branc does not teach the applicant's claimed single camera for capturing images of a whiteboard wherein a boom is positioned above a whiteboard to capture an in focus uniform resolution image of the entire whiteboard. Nor does Keenan in combination with Rodriguez and Branc recognize the advantages of the applicants' claimed invention, such as the audience being able to capture the entire whiteboard with an in focus uniform resolution so that no stitching of images or other manipulations are necessary to produce a readable copy of the whiteboard.

Thus, the applicants have claimed elements not taught in the cited art and which have advantages. Accordingly, no prima facie case of obviousness has been established in accordance with the holding of *In Re Fine*. This lack of prima facie showing of obviousness means that the rejected claims are patentable under 35 USC 103 over Keenan in view of Rodriguez and Branc. As such, it is respectfully requested that Claim 28 be allowed based on the aforementioned quoted claim language.

The applicants gratefully acknowledge the allowance of Claim 22 and the allowability of Claim 18. Since the applicants believe that Claim 18 is dependent on an allowable base claim, as argued above, the applicants decline to incorporate the limitations of the base claims at this time.

In summary, it is believed that the claims 1-28 are in condition for allowance.
Allowance of these claims at an early date is courteously solicited.

Respectfully submitted,



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